

What is claimed is:

1. An electronically controlled braking system comprising:
  - at least one central control unit, said at least one central control unit operable to assign identifiers during an identifier assignment routine;
  - a first distributed electronic control unit;
  - a second distributed electronic control unit;
  - a control network electrically connecting said at least one control unit, said first distributed electronic control unit and said second distributed electronic control unit; and

wherein the identifiers comprise a first identifier and a second identifier, and wherein one of the first identifier or the second identifier is assigned to said first distributed electronic control unit and the other of the first identifier or the second identifier is assigned to said second distributed electronic control unit at least in part based upon the timing of a signal reaching, via said control network, said first distributed electronic control unit and said second distributed electronic control unit.
2. The system of Claim 1:
  - wherein said control network electrically connects said at least one control unit with said first distributed electronic control unit, and said second distributed electronic control unit with said first distributed electronic control unit, and

wherein after the signal is received by said first distributed electronic control unit, said first distributed electronic control unit introduces a time delay before relaying the signal to said second distributed electronic control unit.

3. The system of Claim 1:

wherein said at least one central control unit further generates control signals during operation, each control signal including at least one identifier;

wherein said control signals are received by said first distributed electronic control unit and said second distributed electronic control unit; and

wherein each control signal is acted upon by said first distributed electronic control unit only if that control signal includes the identifier assigned to said first distributed electronic control unit and each control signal is acted upon by said second distributed electronic control unit only if that control signal includes the identifier assigned to said second distributed electronic control unit.

4. The system of Claim 1 wherein each of the identifiers is indicative of the position of a brake component on a vehicle.

5. The system of Claim 1 wherein the identifier assignment routine is performed when a vehicle is first started.

6. The system of Claim 1 wherein the identifier assignment routine is performed periodically or from time to time.

7. The system of Claim 1 wherein the identifier assignment routine is performed when said central control unit senses that a distributed electronic control unit has been added to or removed from said control network.

8. The system of Claim 1 wherein said first distributed electronic control unit and said second distributed electronic control unit are associated with brake components which are actuated by a force selected from the group consisting of an electrical force, a hydraulic force, a pneumatic force and combinations of these.

9. An electronically controlled braking system comprising:  
at least one central control unit, said at least one central control unit operable to assign identifiers during an identifier assignment routine;

a first pair of distributed electronic control units;

a second pair of distributed electronic control units;

a control network electrically connecting said at least one control unit, said first pair of distributed electronic control units, and said second pair of distributed electronic control units; and

wherein the identifiers comprise a first identifier, a second identifier, a third identifier and a fourth identifier, and wherein one of the first identifier, the second identifier, the third identifier or the fourth identifier is assigned to each of the distributed electronic control units at least in part based upon the timing of a signal reaching, via said control network, each of the distributed electronic control units.

10. The system of Claim 9:

wherein said control network electrically connects said at least one control unit with said first pair of distributed electronic control units, and said second pair of distributed electronic control units with said first pair of distributed electronic control units, and

wherein after the signal is received by said first pair of distributed electronic control units, said first pair of distributed electronic control units introduces a time delay before relaying the signal to said second pair of distributed electronic control units.

11. The system of Claim 10:

wherein the signal is received by said first pair of distributed electronic control units, and the first identifier is assigned to one of said first pair of distributed electronic control units and the second identifier is assigned to the other one of said first pair of distributed electronic control units; and

wherein after the time delay, the signal is received by said second pair of distributed electronic control units, and the third identifier is assigned to one of said second pair of distributed electronic control units and the fourth identifier is assigned to the other one of said second pair of distributed electronic control units.

12. The system of Claim 9 wherein said first pair of distributed electronic control units is associated with brake components disposed on a first axle of a vehicle and

wherein said second pair of distributed electronic control units is associated with brake components disposed on a second axle of the vehicle.

13. The system of Claim 9:

wherein said at least one central control unit further generates control signals during operation, each control signal including at least one identifier;

wherein the control signals are received by each of the distributed electronic control units; and

wherein each control signal is acted upon by each distributed electronic control unit only if that control signal includes the identifier assigned to that distributed electronic control unit.

14. The system of Claim 9 wherein each of the identifiers is indicative of the position of a brake component on a vehicle.

15. The system of Claim 9 wherein the identifier assignment routine is performed when a vehicle is first started.

16. The system of Claim 9 wherein the identifier assignment routine is performed periodically or from time to time.

17. The system of Claim 9 wherein the identifier assignment routine is performed when said central control unit senses that a distributed electronic control unit has been added to or removed from said control network.

18. The system of Claim 9 wherein said first pair of distributed electronic control units and said second pair of distributed electronic control units are associated with brake components which are actuated by a force selected from the group consisting of an electrical force, a hydraulic force, a pneumatic force and combinations of these.

19. A method of operating an electronically controlled braking system, said method comprising the steps of:

transmitting a signal to a first distributed electronic control unit and a second distributed electronic control unit; and

assigning one of a first identifier or a second identifier to the first distributed electronic control unit and assigning the other of the first identifier or the second identifier to the second distributed electronic control unit at least in part based upon the timing of the signal reaching the first distributed electronic control unit and the second distributed electronic control unit.

20. The method of Claim 19:

wherein the signal is transmitted to the second distributed electronic unit through the first distributed electronic control unit, and

further comprising the step of introducing a time delay in the first distributed electronic control unit before relaying the signal to the second distributed electronic control unit.

21. The method of Claim 19 further comprising the steps of:

generating control signals during operation, each control signal including at least one identifier;

receiving the control signals with the first distributed electronic control unit and the second distributed electronic control unit;

acting upon the control signals with the first distributed electronic control unit only if that control signal includes the identifier assigned to the first distributed electronic control unit; and

acting upon the control signals with the second distributed electronic control unit only if that control signal includes the identifier assigned to the second distributed electronic control unit.

22. The method of Claim 19 wherein each of the identifiers is indicative of the position of a brake component on a vehicle.

23. The method of Claim 19 wherein said transmitting and assigning steps are performed when a vehicle is first started.

24. The method of Claim 19 wherein said transmitting and assigning steps are performed periodically or from time to time.

25. The method of Claim 19 wherein said transmitting and assigning steps are performed when a distributed electronic control unit has been added to or removed from the braking system.

26. A method of operating an electronically controlled braking system, said method comprising the steps of:

transmitting a signal to a first pair of distributed electronic control units and a second pair of distributed electronic control units; and

assigning one of a first identifier, a second identifier, a third identifier or a fourth identifier to each of the distributed electronic control units at least in part based upon the timing of the signal reaching each of the distributed electronic control units.

27. The method of Claim 26:

wherein the signal is transmitted to the second pair of distributed electronic units through at least one of the first pair of distributed electronic control units, and

further comprising the step of introducing a time delay with the at least one of the first pair of distributed electronic control units through which the signal is transmitted before relaying the signal to the second pair of distributed electronic control units.

28. The method of Claim 27 wherein said assigning step comprises the steps of:

receiving the signal with the first pair of distributed electronic control units, assigning the first identifier to one of the first pair of distributed electronic control units, and assigning the second identifier to the other one of the first pair of distributed electronic control units; and

receiving, after the time delay, the signal with the second pair of distributed electronic control units, assigning the third identifier to one of the second pair of distributed electronic control units, and assigning the fourth identifier to the other one of the second pair of distributed electronic control units.

29. The method of Claim 26 wherein the first pair of distributed electronic control units is associated with brake components disposed on a first axle of a vehicle and wherein the second pair of distributed electronic control units is associated with brake components disposed on a second axle of the vehicle.

30. The method of Claim 26 further comprising the steps of:

generating control signals during operation, each control signal including at least one identifier;

receiving the control signals with the distributed electronic control units; and acting upon each control signal only with the distributed electronic control unit or units which have been assigned an identifier which matches the at least one identifier included in the control signal.

31. The method of Claim 26 wherein each of the identifiers is indicative of the position of a brake component on a vehicle.

32. The method of Claim 26 wherein said transmitting and assigning steps are performed when a vehicle is first started.

33. The method of Claim 26 wherein said transmitting and assigning steps are performed periodically or from time to time.

34. The method of Claim 26 wherein said transmitting and assigning steps are performed when a distributed electronic control unit has been added to or removed from the braking system.